UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,448	09/30/2003	Kevin Scott Beyer	SVL920030088US1	2447

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ART UNIT	PAPER NUMBER
2162	

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/605,448	BEYER ET AL.
	Examiner	Art Unit	
	Dennis Myint	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 September 2003</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-22</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>30 September 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>05/26/2004</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-22 have been examined.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3.   Claims 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification lacks details as to explain the systems, methods, parts of the systems, steps in the methods and other pertinent matters of the invention.

Claim 17 rejected under 35 U.S.C. 112, first paragraph because said claim recites "**when no nodes are present either to the right or left of said insertion point,** assigning a new ID value based on a level associated with said insertion point, wherein a number other than zero starts a count for said level"; "**when no nodes are present to left of said insertion point,** calculating a new ID value via any of the following steps: decreasing last digit of said right node ID value, concatenating said left node ID value with one or more high key value, or concatenating said left node ID value with one or more high key value and a positive value"; or "**when nodes are present to**

the left and right of said insertion point, calculating a new ID value via any of the following steps: concatenating said left node ID value with one or more high key values and a positive value, decreasing last digit of said right node ID value, or increasing last digit of left node ID value, or concatenating said left node ID value with one or more zeros and a positive value, said calculated value greater than ID values of nodes to the left of said insertion point and less than ID values of nodes to the right of said insertion point".

However, the specification of the invention fails to recite the limitation of the method: "*when no nodes are present either to the right or left of said insertion point*".

The rest of the claim of the invention is not enabled for the same reason and are rejected under 35 U.S.C. 112, first paragraph.

Claims 18-22 are rejected under 35 U.S.C. 112, first paragraph because these claims depend on claim 17.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claim 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by O'Neil et

al., (hereinafter "O'Neil") (U.S. Patent Number 6889226).

As per claim 1, O'Neil is directed to a robust method for updating a computer-

stored hierarchical structure of nodes via a node identification technique, said update

retaining properties and parent/child relationships of said hierarchical structure without

renumbering existing node ID values associated with said hierarchical structure

(Abstract, i.e., *The hierarchically organized data is represented as a tree, and each*

node in the tree is assigned a position identifier that represents both depth level of the

node within the hierarchy, and its ancestor/descendant relationship to other nodes) and

teaches the limitations:

(a) "receiving an instruction to insert a new node at an insertion point in said

computer-stored hierarchical structure" (Figure 6; Figure 3; Figure 5: Column 8 Lines

36-40, i.e., *Figure 5 and 6 show how data can be inserted (or careted) into a*

hierarchical data structure, while still maintaining the valuable properties of the position

identifier numbering scheme described above);

(b) "identifying one of, or a combination of the following: a left node ID value

closest to the left of said insertion point or a closest right node ID value closest to the

right of said insertion point" (Column 8 Lines 58-62, i.e., *In this example, nodes 602 and*

604 are assigned position numbers "1.2.1" and "1.2.3", respectively, now becoming

sibling nodes to the right of 504 and to the left of 506);

(c) "calculating a new ID value based upon node ID value(s) identified in (b), said

calculated value greater than ID values of nodes to the left of said insertion point and

less than ID values of nodes to the right of said insertion point" (Column 8 Lines 58-62,

i.e., *In this example, nodes 602 and 604 are assigned position numbers "1.2.1" and*

"1.2.3", respectively, now becoming sibling nodes to the right of 504 and to the left of

506); and

(d) "updating said computer-stored hierarchical structure by inserting said new

node and associating said inserted node with said calculated ID value, wherein order,

node ID values, and relationships between parent, child, and siblings in said hierarchical

structure of nodes remain unchanged with said insertion of new node" (Column 8 Lines

36-40, i.e., *Figure 5 and 6 show how data can be inserted (or careted) into a*

hierarchical data structure, while still maintaining the valuable properties of the position

identifier numbering scheme described above).

As per claim 2, O'Neil teaches the limitation:

"wherein said new ID value is calculated via any of the following steps:

concatenating said left node ID value with one or more high key values and a positive

value, decreasing last digit of said right node ID value, increasing last digit of left node

ID value, decreasing last digit of said right node ID value and concatenating a positive

value, or concatenating said left node ID value with one or more zeros and a positive

value" (Column 9 Lines 10-13, i.e., *If node 610 later needs to be inserted in between*

nodes 608 and 504, the new node 610 will be numbered "1.0.1 (i.e., "0" is the even

number between 1 and −1).)

As per claim 3, O'Neil teaches the limitation:

"wherein a digit in said calculated ID value has a negative value" (Column 9

Lines 7-10, i.e., *although insertions to the left of a group of siblings may require a*

negative odd number – e.g., node 608, which is inserted to the left of the node having

position number "1.1", has position number "1.-1").

As per claim 4, O'Neil teaches the limitation:

"wherein counts between nodes in said hierarchical structure of nodes have a

gap and said high key value equal to said gap value" (Column 8 Lines 60-65, i.e., *In*

other words, even number component values are skipped in the initial numbering of the

nodes, and are reserved for insertions). In the method of O'Neil, even numbers are left

as gaps to be later used as high keys.

As per claim 5, O'Neil teaches the limitation:

"wherein said ID values are encoded and are byte comparable" (Column 10

Lines 30-50, i.e., *The following table shows an exemplary set of Li values, and the*

prefix-property-obedient bit sequences that represent them).

As per claim 6, O'Neil teaches the limitation:

"wherein said nodes are associated with a mark-up language based document"

(Column 2 Lines 53-62, i.e., *Extensible Markup Language (XML);* Column 5 Line 38

through Column 6 Line 28, i.e., *Hierarchy structure of data 200,* and *By convention in*

XML, levels of organization are delimited by).

As per claim 7, O'Neil teaches the limitation:

"wherein said mark-up based language is XML" (Column 2 Lines 53-62, i.e.,

Extensible Markup Language (XML)).

As per claim 8, O'Neil teaches the limitation:

"wherein said method is implemented in conjunction with a relational database" (

Column 2 Lines 55-60, i.e., *The present invention provides a technique for storing such*

hierarchical data in a non-hierarchical data structure such as relation, which still

maintaining information about the hierarchical structure of the data).

Claim 9 is rejected on the same basis of claim 1.

Claim 10 is rejected on the same basis of claim 2.

Claim 11 is rejected on the same basis of claim 5.

Claim 12 is rejected on the same basis of claim 6.

Claim 13 is rejected on the same basis of claim 7.

Claim 14 is rejected on the same basis of claim 8.

Claim 15 is rejected on the same basis of claim 4.

Claim 16 is rejected on the same basis of claim 3.

Referring to claim 17, O'Neal teaches the limitations:

(a) "receiving an instruction to insert a new node at an insertion point in said computer-stored hierarchical structure" (Figure 6; Figure 3; Figure 5: Column 8 Lines 36-40, i.e., *Figure 5 and 6 show how data can be inserted (or careted) into a hierarchical data structure, while still maintaining the valuable properties of the position identifier numbering scheme described above)*;

(b) "identifying one of, or a combination of the following: a left node ID value closest to the left of said insertion point or a closest right node ID value closest to the right of said insertion point" (Column 8 Lines 58-62, i.e., *In this example, nodes 602 and 604 are assigned position numbers "1.2.1" and "1.2.3", respectively, now becoming sibling nodes to the right of 504 and to the left of 506)*;

(c) calculating a new ID value via one of the follows ways:

(i) when no nodes are present either to the right or left of said insertion point, assigning a new ID value based on a level associated with said insertion point, wherein a number other than zero starts a count for said level (Column 8 Lines 58-62, i.e., *In this example, nodes 602 and 604 are assigned position*

numbers "1.2.1" and "1.2.3", respectively, now becoming sibling nodes to the

right of 504 and to the left of 506);

(ii) "when no nodes are present to right of said insertion point, calculating

a new ID value via any of the following steps: increasing last digit of said left

node ID value or concatenating said left node ID value with one or more zeros

and a positive value" (Column 9 Lines 10-13, i.e., If node 610 later needs to be

inserted in between nodes 608 and 504, the new node 610 will be numbered

"1.0.1 (i.e., "0" is the even number between 1 and –1);

(iii) "when no nodes are present to left of said insertion point, calculating a

new ID value via any of the following steps: decreasing last digit of said right

node ID value, concatenating said left node ID value with one or more high key

value, or concatenating said left node ID value with one or more high key value

and a positive value" (Column 8 Lines 58-62, i.e., In this example, nodes 602 and

604 are assigned position numbers "1.2.1" and "1.2.3", respectively, now

becoming sibling nodes to the right of 504 and to the left of 506); or

(iv) "when nodes are present to the left and right of said insertion point,

calculating a new ID value via any of the following steps: concatenating said left

node ID value with one or more high key values and a positive value, decreasing

last digit of said right node ID value, or increasing last digit of left node ID value,

or concatenating said left node ID value with one or more zeros and a positive

value, said calculated value greater than ID values of nodes to the left of said

insertion point and less than ID values of nodes to the right of said insertion

point" (Column 9 Lines 10-13, i.e., *If node 610 later needs to be inserted in*

between nodes 608 and 504, the new node 610 will be numbered "1.0.1 (i.e., "0"

is the even number between 1 and −1; Column 8 Lines 58-62, i.e., *In this*

example, nodes 602 and 604 are assigned position numbers "1.2.1" and "1.2.3",

respectively, now becoming sibling nodes to the right of 504 and to the left of

506); and

(d) "updating said computer-stored hierarchical structure by inserting said new

node and associating said inserted node with said calculated ID value, wherein order,

node ID values, and relationships between parent, child, and siblings in said hierarchical

structure of nodes remain unchanged with said insertion of new node" (Column 8 Lines

36-40, i.e., *Figure 5 and 6 show how data can be inserted (or careted) into a*

hierarchical data structure, while still maintaining the valuable properties of the position

identifier numbering scheme described above).

Claim 18 is rejected no the same basis as claim 3.

Claim 19 is rejected no the same basis as claim 5.

Claim 20 is rejected no the same basis as claim 6.

Claim 21 is rejected no the same basis as claim 7.

Claim 22 is rejected no the same basis as claim 8.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure as follows.

U.S. Patent Application Publication Number 2003/0110150 (O'Neil et al.)

U.S. Patent Application Publication Number 2003/0130981 (Nehru et al.)

U.S. Patent Number 7062499 (Nehru et al.)

U.S. Patent Number 7016904 (Grove et al.)

U.S. Patent Number 6505206 (Tikkanen et al.)

U.S. Patent Number 6499032 (Tikkanen et al.)

U.S. Patent Number 6480857 (Chandler)

U.S. Patent Number 6115716 (Tikkanen et al.)

O'Neil, Patrick and Elizabeth O'Neal: *"Insert-Friendly SML Node Labels",*

SIGMOND 2004, June 13-18, 2004, Paris, France (ACM 1-58113-859—8/04/06)

Contact Information

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dennis Myint whose telephone number is (571) 272-

5629. The examiner can normally be reached on 8:30AM-5:30PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-5629.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Dennis Myint   AU-2162

Primary Examiner

Cam y Truong